

Claims

[c1] We claim :

1. In a drum-in-hat park brake assembly for a vehicle having a first brake shoe and a second brake shoe that are respectively retained on a backing plate that is secured to said vehicle, said first brake shoe having a first web with a first engagement end and a second engagement end, said second brake shoe having a second web with a first engagement end and a second engagement end, said first engagement end of each of said first and second webs being aligned with an actuator assembly while said second engagement end of each of said first and second webs being spaced apart by an adjuster mechanism, spring means attached to said first and second webs for urging said first and second webs toward said anchor, actuator assembly and adjuster mechanism, said adjuster mechanism including a yieldable member for reducing the space between said second engagement end of each of said first and second webs to limit braking force to a predetermined maximum.

[c2] 2. The drum-in-hat park brake assembly of claim 1, wherein the yieldable member comprises a spring.

- [c3] 3. The drum-in-hat park brake assembly of claim 2, wherein the spring comprises a plurality of aligned domed washers.
- [c4] 4. The drum-in-hat park brake assembly of claim 1, wherein the adjuster mechanism comprises a threaded inter-engaged adjuster screw and adjustment nut, a sleeve for receiving in a first end a limited portion of said adjuster screw, said limited portion being determined by the adjustment nut, a plunger having a limited portion received in as second end of said sleeve, a first flange on said second end of said sleeve, a second flange on said plunger located intermediate of first and second ends thereof and a yieldable member comprising a load limiting compression spring captive between said sleeve flange and said plunger flange, said limited portion of the plunger located in said sleeve being determined by a separation between said sleeve and plunger flanges with said separation being controlled by the degree of compression of the spring.
- [c5] 5. The drum-in-hat park brake assembly of claim 4, wherein said yieldable member comprises a plurality of aligned Belleville washers.
- [c6] 6. An auxiliary brake assembly for a wheeled vehicle,

comprising:

a first braking surface fixed to a stationary portion of the vehicle;

a second braking surface fixed to a rotatable member of the vehicle that is coupled to and rotates with a vehicle wheel;

an operator actuatable brake actuating assembly for selectively forcing first and second brake surfaces together to retard the rotation of said vehicle wheel; and

a brake force limiting mechanism operative upon the brake actuating force reaching a predetermined level to limit any further increase in brake actuating force.

[c7] 7. The auxiliary brake assembly of claim 6, wherein the brake force limiting mechanism comprises a first and second braking surface running clearance adjustment mechanism.

[c8] 8. The auxiliary brake assembly of claim 6, wherein said second braking surface comprises a drum inner surface of a drum-in hat brake rotor and said first braking surface comprises a pair of brake shoes disposed radially inwardly of the drum, and said actuating assembly includes a cable controlled actuator for varying a spacing between respective brake shoe first ends.

[c9] 9. The auxiliary brake assembly of claim 8, wherein said

brake force limiting mechanism comprises a braking surface running clearance adjustment mechanism for adjusting the spacing between respective brake shoe second ends.

[c10] 10. The auxiliary brake assembly of claim 9, wherein the adjustment mechanism comprises a variable length elongated assembly having opposite ends thereof engaging respective brake shoe second ends, a threaded portion for effecting periodic running clearance adjustments, and a normally extended spring biased telescopic portion compressible along an axis upon braking force exceeding a prescribed value to reduce the separation between the brake shoe second ends and thereby limit further increase in brake actuating force

[c11] 11. The auxiliary brake assembly of claim 8, wherein the cable controlled actuator increases braking force by increasing the spacing between respective brake shoe first ends and the brake force limiting mechanism functions to limit further increase in brake actuating force by effecting a compensating decrease of the spacing between the respective brake shoe second ends.

[c12] 12. A braking force limiting brake adjuster for a wheeled vehicle auxiliary brake assembly comprising a variable length elongated assembly having opposite ends thereof

engaging one end of each of two brake shoes, a threaded portion for varying the separation between the assembly opposite ends to effect periodic running clearance adjustments, and a spring bias coupling between the assembly ends normally for urging the ends away from one another and yieldable upon a braking force attaining a predetermined maximum to compress force to reduce the separation between the ends and thereby minimizing any further increase in braking force.

[c13] 13. The braking force limiting brake adjuster of claim 12, wherein said spring bias coupling comprises a normally extended spring biased telescopic portion compressible along an axis upon braking force exceeding a prescribed value to reduce the separation between the brake shoe opposite ends and thereby minimize further increase in braking force.

[c14] 14. The braking force limiting brake adjuster of claim 13, further comprising a plurality of aligned domed washers for providing the spring bias.

[c15] 15. The braking force limiting brake adjuster of claim 12, wherein the adjuster mechanism comprises a threaded interengaged adjuster screw and adjustment nut, a sleeve for receiving in one end a limited portion of the adjuster screw, the portion being determined by the

adjustment nut, a plunger having a limited portion received in the sleeve other end, a first flange on the sleeve other end, a second flange on the plunger intermediate the ends thereof, the spring bias coupling comprising a load limiting compression spring captive between the sleeve flange and plunger flange, the limited portion of the plunger which is received in the sleeve being determined by the separation between the flanges, which separation is controlled by the degree of compression of the spring.

- [c16] 16. The braking force limiting brake adjuster of claim 15, further comprising an elongated slot in a sidewall portion of the sleeve and a transverse pin fixed to the plunger and passing through the elongated slot for limiting plunger travel within the sleeve.